

CLAIMS

1. A method for synthesizing and purifying an oligonucleotide immobilized on a solid support complex, comprising:

a) providing:

i) a polymer support, and

ii) four pools of deoxyribonucleoside 3'-phosphoramidite monomers in solution, wherein at least one of said monomers contains 9-fluorenylmethoxycarbonyl as an amino protecting group;

b) sequentially contacting said polymer support with a solution of monomers from one or more of said four pools under conditions such that a sequence of monomers is immobilized on said polymer support to generate an oligonucleotide/polymer support complex, wherein said complex comprises at least one monomer containing 9-fluorenylmethoxycarbonyl and wherein said solution, after said contacting, comprises unreacted material;

c) treating said complex under conditions such that said unreacted material is substantially removed, thereby creating a purified oligonucleotide/polymer support complex, and

d) treating said purified oligonucleotide/polymer support complex under conditions whereby said 9-fluorenylmethoxycarbonyl is released.

2. The method of Claim 1, wherein said deoxyribonucleoside 3'-phosphoramidite monomer containing 9-fluorenylmethoxycarbonyl as an amino protecting group is a 9-fluorenylmethoxycarbonyl-2'-deoxycytidine 3'-phosphoramidite.

3. The method of Claim 1, wherein said deoxyribonucleoside 3'-phosphoramidite monomer containing 9-fluorenylmethoxycarbonyl as an amino protecting group is a 9-fluorenylmethoxycarbonyl-2'-deoxyadenosine 3'-phosphoramidite.

5 4. The method of Claim 1, wherein said deoxyribonucleoside 3'-phosphoramidite monomer containing 9-fluorenylmethoxycarbonyl as an amino protecting group is a 9-fluorenylmethoxycarbonyl-2'-deoxyguanosine 3'-phosphoramidite.

10 5. The methods of Claim 1, wherein the number of said monomers immobilized on said polymer support are in a range between one hundred and three hundred monomers.